N 27/2/984

Preprint from the 1984

BUREAU OF MINES MINERALS YEARBOOK

The Mineral Industry of Other Near East Countries

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This publication is a chapter from the current Bureau of Mines Minerals Yearbook, comprising *Volume I, Metals and Minerals; Volume II, Area Reports: Domestic; Volume III, Area Reports: International.* The separate volumes of the Yearbook are sold by the Superintendent of Documents, Washington, D.C. 20402.

The Mineral Industry of Other Near East Countries

By Ben A. Kornhauser[1] and Thomas O. Glover[1]

CONTENTS

	Page
Afghanistan	1
Bahrain	4
Lebanon	5
Oman	6
Qatar	9
Syria	10
People's Democratic Republic of Yemen	11
Yemen Arab Republic	12

AFGHANISTAN[2]

The mineral industry consisted primarily of natural gas production and of urea fertilizer, which was manufactured for domestic agriculture. Copper and iron deposits were being developed.

Information regarding the mineral industry of Afghanistan was sparse. The Government continued to emphasize the development of mineral resources that could benefit the economy of the U.S.S.R. and repay Soviet grants. The northern half of the country, north of the Hindu Kush mountain range and adjacent to the U.S.S.R., received considerable Soviet aid to develop mineral resources.

Of the $680 million[3] obtained from exports, natural gas was the only mineral product exported, and it was also the main contributor to the gross domestic product (GDP). Imports of $940 million consisted of food supplies and petroleum products. Major trading partners were the U.S.S.R. and other centrally planned economy countries.

The Ainak copper deposit, south of Kabul in Logar Province, was expected to come onstream in 1985. The project was expected to produce 150,000 tons per year of copper, most of which probably would be exported to the U.S.S.R. The large Hajigak iron ore deposit, 60 miles northwest of Kabul in the Hindu Kush Mountains, also was being developed.

The fertilizer and powerplant complex at Mazar-i-Sharif, which had been developed with Soviet aid in the 1974-76 period, produced urea fertilizer for domestic agriculture worth about $10 million annually. The plant's thermal power was generated with domestic natural gas. The total electric power capacity of the country in 1984 was 465,000 kilowatts.

Table 1.—Other countries of the Near East: Production of mineral commodities[1]

(Metric tons unless otherwise specified)

Country and commodity	1980	1981	1982	1983[p]	1984[e]
AFGHANISTAN[2]					
Barite	3,000	1,000	e2,000	e2,000	2,000
Cement, hydraulic[e]	50,000	95,000	120,000	150,000	150,000
Coal, bituminous	--	50,000	e60,000	e70,000	70,000
Gas, natural:					
Gross million cubic feet	97,500	r100,000	102,000	e100,000	100,000
Marketed do.	e60,000	79,000	81,225	84,755	80,000
Gypsum	--	--	3,000	e5,000	4,000
Natural gas liquids[e] thousand 42-gallon barrels	5	5	110	110	110
Nitrogen: N content of ammonia	9,979	9,070	8,000	e8,000	8,000
Salt, rock[e]	5,000	6,000	10,000	10,000	10,000
BAHRAIN					
Aluminum metal: Primary, smelter	126,152	141,000	170,960	170,000	177,000
Gas, natural:					
Gross million cubic feet	123,442	122,000	130,507	139,325	NA
Marketed do.	97,468	78,059	91,373	96,321	NA
Natural gas liquids:					
Butane thousand 42-gallon barrels	875	817	890	914	NA
Propane do.	1,000	1,028	986	996	NA
Naphtha do.	986	1,170	1,139	1,209	NA
Petroleum:					
Crude do.	18,338	16,902	16,067	15,164	14,235
Refinery products:					
Gasoline do.	8,869	11,173	10,068	4,993	NA
Jet fuel do.	13,797	13,456	8,341	9,984	NA
Kerosine do.	547	2,617	2,676	1,096	NA
Distillate fuel oil do.	20,586	25,270	19,515	16,848	NA
Residual fuel oil do.	27,046	28,648	19,866	16,344	NA
Lubricants do.	375	22	363	2,340	NA
Other do.	e12,300	12,615	9,975	10,881	NA
Refinery fuel and losses do.	e2,100	2,177	1,534	1,822	NA
Total do.	e85,620	95,978	72,338	64,308	NA
Sulfur, byproduct of petroleum do.	32,559	36,000	34,060	49,275	NA
LEBANON[2]					
Cement, hydraulic thousand tons	1,484	2,391	1,800	e1,000	1,000
Gypsum	e10,000	9,500	e5,000	e5,000	5,000
Iron and steel: Metal, semimanufactures, thousand tons	e220	185	e150	e100	100
Lime[e] do.	120	61	50	20	20
Petroleum refinery products:[e]					
Gasoline thousand 42-gallon barrels	3,400	3,000	2,400	2,300	NA
Jet fuel do.	900	600	400	300	NA
Kerosine do.	150	100	50	50	NA
Distillate fuel oil do.	2,600	2,400	2,000	2,000	NA
Residual fuel oil do.	5,000	4,300	3,800	3,500	NA
Liquefied petroleum gas do.	300	300	200	175	NA
Unspecified do.	200	200	150	125	NA
Refinery fuel and losses do.	800	600	500	400	NA
Total do.	13,350	11,500	9,500	8,850	NA
Salt[e] thousand tons	12	15	10	5	10
OMAN					
Cement, hydraulic	--	--	--	e2,200	3477,000
Chromite, gross weight	--	--	--	e24,000	37,000
Copper:					
Mine output, metal content	--	--	--	11,300	316,200
Smelter	--	--	--	3,290	321,300
Refinery	--	--	--	3,290	315,100
Gas, natural:					
Gross[e] million cubic feet	117,000	3174,835	188,000	195,000	190,000
Marketed do.	21,189	45,000	75,000	86,700	85,000
Natural gas liquids:[e]					
Butane thousand 42-gallon barrels	40	346	50	50	50
Propane do.	5	35	5	5	5
Natural gasoline do.	600	3730	800	800	800
Petroleum:					
Crude do.	103,528	119,808	122,598	137,970	152,000

See footnotes at end of table.

Table 1.—Other countries of the Near East: Production of mineral commodities[1] —Continued

(Metric tons unless otherwise specified)

Country and commodity	1980	1981	1982	1983[p]	1984[e]
OMAN —Continued					
Petroleum —Continued					
Refinery products:					
Gasoline thousand 42-gallon barrels	--	--	--	e1,500	NA
Jet fuel do.	--	--	--	e1,000	NA
Kerosine do.	--	--	--	e500	NA
Distillate fuel oil do.	--	--	--	e3,000	NA
Residual fuel oil do.	--	--	--	e2,500	NA
Liquefied petroleum gas do.	--	--	--	e500	NA
Naphtha do.	--	--	--	e300	NA
Unspecified do.	--	--	--	e200	NA
Refinery fuel and losses do.	--	--	--	e100	NA
Total do.	--	--	--	e9,600	NA
Sand and gravel thousand tons	102	e800	1,343	3,410	3e6,420
Stone:					
Marble do.	--	e20	50	33	3e37
QATAR[2]					
Cement, hydraulic do.	209	258	261	248	3e478
Gas, natural:					
Gross million cubic feet	224,000	222,000	e190,000	202,136	290,000
Marketed do.	79,935	94,250	e95,000	e100,000	100,000
Iron and steel, semimanufactures thousand tons	440	453	475	477	475
Natural gas liquids thousand 42-gallon barrels	e265	6,126	6,516	e10,340	3e11,853
Nitrogen: N content of ammonia	418,000	366,612	434,016	491,000	3e547,000
Petroleum:					
Crude thousand 42-gallon barrels	172,554	146,370	120,289	102,000	150,000
Refinery products:					
Gasoline do.	e950	1,144	1,010	1,097	3e2,007
Jet fuel do.	450	480	478	442	3e860
Kerosine do.	33	33	32	69	3e13
Distillate fuel oil do.	e1,000	1,764	1,320	1,359	3e1,334
Other[e] do.	75	75	75	82	3e425
Refinery fuel and losses and partly finished oil do.	e1,500	1,500	1,086	NA	NA
Total do.	4,008	4,996	4,001	3,049	4,639
Stone: Limestone thousand tons	2,036	2,300	2,185	e1,600	3e1,500
Sulfur	--	5,600	12,000	19,000	33,000
SYRIA					
Asphalt, natural thousand tons	89	90	71	54	NA
Cement, hydraulic do.	1,995	2,150	2,850	2,850	3e5,000
Gas, natural:[e]					
Gross million cubic feet	60,000	55,000	52,000	62,050	NA
Marketed do.	7,000	8,000	9,000	15,890	NA
Gypsum	78,636	79,545	e80,000	e350,000	200,000
Iron and steel: Steel, crude thousand tons	110	110	99	e67	3e69
Nitrogen: N content of ammonia	39,000	30,000	64,900	113,400	NA
Petroleum:					
Crude thousand 42-gallon barrels	60,656	58,990	55,625	61,320	3e62,460
Refinery products:					
Gasoline do.	5,073	4,818	e5,255	e5,300	NA
Kerosine and jet fuel do.	3,650	4,051	e4,400	e4,500	NA
Distillate fuel oil do.	18,980	30,998	e32,000	e33,000	NA
Residual fuel oil do.	10,950	14,231	e17,700	e18,000	NA
Liquefied petroleum gas do.	657	1,423	e1,500	e1,800	NA
Asphalt do.	1,497	2,227	e2,250	e2,300	NA
Refinery fuel and losses do.	1,241	1,752	e1,800	e1,800	NA
Total do.	42,048	59,500	e64,905	e66,700	NA
Phosphate rock thousand tons	1,319	1,321	1,455	1,229	3e1,500
Salt do.	90	90	102	87	3e87
Stone, sand and gravel:					
Stone: Dimension, marble cubic meters	84,860	60,000	20,000	71,000	3e7,100
Sand and gravel thousand tons	19	e20	205	5,780	3e5,829
Sulfur, byproduct of petroleum and natural gas do.	e5	6	22	e30	NA
Unspecified do.	329	e3,000	6,200	11,224	3e4,530

See footnotes at end of table.

Table 1.—Other countries of the Near East: Production of mineral commodities[1] —Continued

(Metric tons unless otherwise specified)

Country and commodity	1980	1981	1982	1983[p]	1984[e]
PEOPLE'S DEMOCRATIC REPUBLIC OF YEMEN					
Petroleum refinery products:[e]					
Gasoline ..... thousand 42-gallon barrels	1,000	1,800	2,000	2,200	NA
Jet fuel ..... do.	1,200	2,000	2,300	2,500	NA
Kerosine ..... do.	800	1,200	1,500	1,800	NA
Distillate fuel oil ..... do.	2,500	3,000	3,500	4,000	NA
Residual fuel oil ..... do.	6,000	12,000	13,000	14,000	NA
Other ..... do.	800	1,200	1,500	1,800	NA
Refinery fuel and losses ..... do.	870	1,000	1,200	1,200	NA
Total ..... do.	13,170	22,200	25,000	27,500	NA
Salt[e] ..... thousand tons	80	75	75	75	NA
YEMEN ARAB REPUBLIC[2]					
Cement ..... do.	81	82	237	600	[3]850
Gypsum	NA	[e]20,000	21,923	23,138	[3]24,295
Salt[e]	65,000	65,000	57,000	141,000	[3]148,000

[e]Estimated. [p]Preliminary. [r]Revised. NA Not available.

[1]Table includes data available through Aug. 1, 1985.

[2]In addition to the commodities listed, asbestos and lapis lazuli (in Afghanistan) and a variety of other crude construction materials (clays, sand and gravel, and stone) presumbably are produced, but output is not reported quantitatively, and available information is inadequate to make reliable estimates of output levels.

[3]Reported figure.

BAHRAIN[4]

Bahrain is a small island state in the Arabian Gulf near Saudi Arabia. Oil, natural gas, and aluminum dominated Bahrain's economy. Bahrain has close economic ties with Saudi Arabia and other Arab states in the region.

Oil and natural gas accounted for about 68% of Government revenues and 25% of the GDP. As important as oil was to the national economy of Bahrain, oil reserves would be depleted in 10 to 15 years. Production of oil was 39,000 barrels per day (bbl/d) in 1984 and declining steadily. The state's natural gas production would last for another 50 years at the 1984 rate of consumption.

Bahrain's trade deficit in 1984 rose to $380.5 million[5] despite an increase in its oil exports of $2.72 billion. Bahrain's imports of crude oil amounted to $1,648 million. Total imports of oil accounted for approximately 47% of all imports to Bahrain.

Oil and natural gas revenues were derived from domestic oil operations and from the Abu Safaa Oilfield, owned and operated by Saudi Arabia. Production of oil from domestic operations amounted to approximately 14.2 million barrels in 1984, a 6.1% reduction from that of 1983. A 35-year development and production-sharing contract was signed with Kuwait Foreign Petroleum Exploration Co. for 2,000 square kilometers offshore. The area was relinquished by Superior Oil Co. of the United States in 1983 after three dry holes had been drilled. The Kuwaitis were committed to new seismic surveys and two exploratory wells within the first 3 years. If commercial oil were found, 70% would go to the Bahrain National Oil Co. (Banoco). Disposition of such gas as might be discovered was left to future agreements between the two companies.

During the last decade, Bahrain had worked diligently to diversify its economy. Bahrain had important aluminum and gas liquefaction installations in addition to the Bahrain Petroleum Co. Ltd. (BAPCO) oil refinery, which had been the island's principal economic asset for almost one-half century. During 1984, Bahrain built a petrochemical complex and an iron ore pelletizing plant. It had already successfully established a major international financial sector that included about 80 offshore banking units and a total of more than 170 financial institutions.

Bahrain's development as a major financial center had been the most successful aspect of its efforts to diversify from oil as its major source of revenue. The regional economic climate in which the institutions operated was difficult owing to a decline in oil revenues and the restrictions put on offshore banking units.

The BAPCO refinery, with a capacity of approximately 240,000 bb/d, was still the most important economic asset of Bahrain. The Government of Bahrain owned 60% of the refinery with California Texas Petroleum Co. (Caltex) owning the remaining 40%. Caltex renewed its contract for management services at the refinery. During 1984, the refinery operated at approximately 80% of capacity. The supply of crude oil from Bahrain's Awali Field was supplemented with crude oil purchased from Saudi Arabia's Abu Safaa Oilfield at the Organization of Petroleum Exporting Countries' (OPEC) price. Owing to OPEC prices, BAPCO's processing of Saudi Arabian crude oil was not profitable.

Bahrain's gas liquefaction plant was very profitable. The plant made use of associated gas that was piped directly from Bahrain's Awali Field to the plant where it was converted into butane, propane, and naphtha. In addition to the associated gas, Bahrain had ample supplies of deep-strata Khuff Formation gas that was used to power many of Bahrain's industries including its aluminum industry.

The Italian firm Snamprogetti S.p.A. was constructing the Gulf Petrochemical Industries Complex (GPIC) in 1984, with the expectation of producing methanol and ammonia in late 1985. The plant was scheduled to produce 1,000 tons of each daily. The GPIC venture was shared equally among Petrochemical Industrial Co. of Kuwait, the Saudi Basic Industries Corp. (SABIC), and the Government of Bahrain. The methanol would be marketed by SABIC while the ammonia would be marketed by Kuwait.

Aluminum Bahrain Ltd. (ALBA) operated an aluminum smelter that was owned principally by the Government of Bahrain and by the Saudi Public Investment Fund. Their combined 78% share of the smelter's output was sold through Bahrain Aluminum Co. (BALCO), which was also owned by both Governments. ALBA produced 177,000 tons of aluminum, and BALCO's profits exceeded $30 million. ALBA was proceeding with its plans to automate the smelter. Eventually, the smelter's capacity was expected to increase to 200,000 tons. Gulf Aluminum Rolling Mill Co. (GARMCO), a joint project of Bahrain, Iraq, Kuwait, Oman, and Saudi Arabia, was planned for completion in 1985. GARMCO will have a capacity of 40,000 tons per year of aluminum sheet, coil, and foil stock. The mill was constructed by Kobe Steel Ltd. of Japan.

Arab Iron & Steel Co.'s iron ore pelletizing plant was completed on schedule late in 1984, and trial operations were conducted late in the year. The plant, constructed by Kobe Steel was scheduled to produce 4 million tons per year of iron ore pellets for export to regional markets. The pelletizing plant was off Sitra. The plant will utilize feedstock iron ore imported from Brazil and India as well as 30 million cubic feet per day of Bahrain's natural gas. The pellets are to be exported to iron and steel rolling mills in Saudi Arabia and Qatar. In the first year of its operation, the plant will operate at one-half of its design capacity and produce 2 million tons of iron ore pellets. The first shipment, consisting of 20,000 tons of pellets, was shipped to Jubail, Saudi Arabia, on December 12, 1984. The company also plans to market its output in Indonesia, Malaysia, Pakistan, and some European states.

Gulf Acid Industries expected to begin operating in early 1985. Its plant was scheduled to produce 30 tons of sulfuric acid per day, using sulfur purchased from Banoco. The plant expected to sell about 60 tons of sulfur per month to Bahrain Aluminum Extrusion Co. and about 250 tons per month to the Abu Jar Jur desalination plant.

LEBANON[6]

The mineral industry consisted primarily of cement and gypsum production, light manufacturing, and oil refining, and contributed an estimated 13% of GDP.

Lebanon's mineral industry and gross national product continued to decline under the chaotic conditions that resulted in continual destruction of the infrastructure, equipment, and plants. At yearend, the balance of payments deficit was estimated at $2 billion' owing to factors such as an estimated 50% to 60% decrease in money returned by Lebanese nationals working in oil producing countries and Government spending unsupported by the collection of taxes including duties and their revenues from import and export activities. Illegal or "free" ports first appeared in 1976 when legitimate ports such as Beirut closed or fell to armed factions. Illegal ports usurped the state's functions, deprived the Government of millions of dollars of needed revenues, and also charged lower fees.

Arab countries, in 1984, received 96% of

Lebanon's total exported manufactures, of which Saudi Arabia took about 60%. Exports of mineral and chemical products contributed about 6% and 10%, respectively, to trade income.

The import of crude oil and petroleum products was the principal drain on official, foreign reserves. In addition, the Government's subsidization of petroleum products was estimated to cost the Ministry of Industry and Oil $400 million per year.

The cement company Ciment de Sibline, which was established in 1983, was reported to have an operating plant in Saida, south of Beirut.

The Government-owned oil refinery at Tripoli, north of Beirut, restarted operations after several months of inactivity because of destruction of various units, storage tanks, and the pipeline network by warring factions. At startup, the refinery only produced about 20,000 bbl/d of fuel and heavy oil, which would be helpful to the cement factories in Shikka. Gasoline was to be produced later. The refinery of the Mediterranean Refining Co. (Medreco) in Zahrani, near Sidon, also was back in production, producing about 16,000 bbl/d of gasoline, kerosine, and fuel oils. Medreco was owned equally by the Mobil Oil Corp. and Caltex (a 50-50 venture of Standard Oil Co. of California and Texaco Inc.).

OMAN[8]

The mineral industry was led by oil and gas production, with small but growing input from chromite, copper, gold, and silver.

Accelerated economic activity in 1984 resulted from increased oil production, which was the cornerstone of the economy and offset the decline in oil prices. Oman's oil export terminus at Mina al Fahal, which was outside the embattled Strait of Hormuz, attracted many customers. In 1984, total revenues were $4.53 billion,[9] of which oil contributed $3.71 billion. Government expenditures in that period amounted to $5.12 billion. The budget deficit resulted from such factors as declining oil prices, growing expenditures for defense and security, and civil and industrial development projects. Although nonoil industrial contributions to the GDP were still small, they were growing and being stimulated by Government financial assistance.

East Asian countries consumed 89% of the exported oil, with Japan, the Republic of Korea, and Singapore purchasing 62%, 16%, and 8%, respectively, of that total. Practically all the products required by Oman's developing economy, worth about $3 billion, were imported, but income from oil exports maintained a large trade surplus. Japan, the United Kingdom, and the United States were the major exporters, in the order listed, to Oman. Imports rose to $328 million, an increase of 10.3% over the amount spent in 1983.

The state-owned Oman Mining Co., which operated the Sohar copper deposits, produced 15,100 tons of refined copper, 5,900 tons of chromite, 51,400 troy ounces of silver, and 1,690 troy ounces of gold. The copper was worth about $21 million while the balance was worth about $1.65 million. The small-scale chromite extraction was from a deposit near Ramji. The lump ore was stockpiled at the Majis Jetty, 10 miles north of Sohar, from where both the chromite and copper were exported. The commodities were sold mostly by Amalgamated Metal Corp. and Johnson Matthey PLC to the Federal Republic of Germany, France, and the United Kingdom with about 3,000 tons of copper going to Japan. Most of the chromite was sold to European customers. Since chromite production could be increased, other markets, particularly the United States, were sought.

Exploration and drilling continued vigorously on all major concessions. Petroleum Development Oman (PDO) was the largest concessionaire and major oil producer. PDO's owners were the Government, 60%; Royal Dutch/Shell of the Netherlands, 34%; Compagnie Française des Pétroles (CFP), 4%; and Participations and Exploration Corp. of Portugal, 2%. PDO disclosed reserves of 3.5 billion barrels of crude oil and natural gas liquids at yearend, up 513 million barrels over that of 1983. The bulk of PDO's production came from the north Oman fields. Heavy crudes from Marmul in the south were mixed with lighter crudes from the older northern fields in Lekhwair, Tahud, and Yibal at the only export terminus at Mina al Fakal near the capital, Muscat, to produce Oman's blend of 34° API Arabian light-grade crude oil.

PDO was improving its pipeline system and building new pumping stations in order to produce 650,000 bbl/d, if the oil were discovered. Three pilot plant projects were

started to establish the suitability of three different enhanced oil recovery processes. The best process would be used to exploit large reservoirs of heavy oil, mostly in south Oman, where conventional methods often achieved recovery rates of less than 10%. Discussions continued on the economic viability of a proposed Gulf Cooperation Council (GCC) funded pipeline and a 250,000-bbl/d export refinery in the southern city of Salalah. The purpose of the project would be to provide another oil outlet outside the Strait of Hormuz for the GCC states of Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates.

Of PDO's oil discoveries, two were in south Oman at Ihsan and Jarmeel-1, and three were in central Oman at Barakat-2, Burhan-1, and Hassira-2. In February, the Mezoun-1 wildcat in the Wadi Aswad tract of Japex Oil Co., owned by Japan Petroleum Exploration (85%) and C. Itoh Energy Development Corp. (15%), tested up to 700 bbl/d of 44° API crude. Development costs were to be reasonable, and the well classified as commercial because the producing formation was at about 4,500 feet.[10] The Safah Oilfield on the 2.4-million-acre Sunainah block in northwest Oman, owned by Occidental Petroleum Corp. of Oman (65%) and Gulf Oman Petroleum Ltd. (35%), was being developed by Occidental, the operator. Gulf had drilled the discovery well, the seventh drilled so far in the field. This well produced 1,200 bbl/d of light oil in tests. The quality of this crude oil was rated at 42° API and had a low sulfur content. About 530 bbl/d was being produced already from the field. By yearend, the pipeline was expected to be completed linking Safah with Oman's main pipeline system at Lekhevair, about 40 miles south-southwest, which extended to the crude oil export terminal.[11]

Société Nationale Elf Aquitaine Oman relinquished its offshore concession of about 1,500 square miles near the Musandam Peninsula in the Strait of Hormuz. Although gas and condensate had been located at two wells, the finds were not considered commercial because of the very large costs involved and the problems of development and marketing.[12]

Steps were taken toward optimizing the use of associated gas, which was used by powerplants and industry. In May, the $93 million expansion of the Yibal gas processing plant was completed, boosting capacity to 320 million cubic feet per day from 125 million cubic feet per day. Five new wells were drilled at Yibal to supply the plant, which was built by Comprimo Belgie NV of the Netherlands and Nissho-Iwai Corp. and Niigata Engineering Co. Ltd. of Japan. New processing capacity also was being installed at Saih Nihyada in central Oman to process gas from Saih Rawl and other local fields. Output would be used in oil recovery projects in the south. At the Tahud Field, associated gas usage was raised to 80% with the addition of compressor stations and suction grids. Gas flaring had been reduced substantially on the installation of new gas lifts and compression units. Main gas pipelines ran parallel to the oil supply network.[13]

Table 2.—Oman: Exports and reexports of mineral commodities[1]

(Metric tons unless otherwise specified)

Commodity	1982	1983	Destinations, 1983	
			United States	Other (principal)
METALS				
Aluminum: Metal including alloys, all forms	--	6	--	All to United Arab Emirates.
Copper: Metal including alloys:				
Unwrought	--	4,143	--	Netherlands 3,640; United Kingdom 500.
Semimanufactures	22	8	--	All to United Arab Emirates.
Iron and steel: Metal, semimanufactures:				
Bars, rods, angles, shapes, sections	583	417	--	United Arab Emirates 406.
Universals, plates, sheets	88	542	--	All to United Arab Emirates.
Wire	35	3	--	Do.
Tubes, pipes, fittings	168	641	--	United Arab Emirates 636.
Nickel: Metal including alloys, all forms	--	6	--	All to United Arab Emirates.
Tin: Metal including alloys, all forms	15	16	--	Do.
Other: Base metals including alloys, all forms	1,238	--		

See footnotes at end of table.

Table 2.—Oman: Exports and reexports of mineral commodities[1] —Continued

(Metric tons unless otherwise specified)

Commodity	1982	1983	Destinations, 1983	
			United States	Other (principal)
NONMETALS				
Abrasives, n.e.s.:				
Natural: Corundum, emery, pumice, etc value, thousands	$4	--		
Grinding and polishing wheels and stones	700	--		
Cement	2,302	1,365	--	All to United Arab Emirates.
Fertilizer materials:				
Crude, n.e.s	240	--		
Manufactured:				
Nitrogenous	106	701	--	Do.
Unspecified and mixed	--	53	--	Do.
Lime	131	21	--	Do.
Salt and brine	--	22	--	Do.
Stone, sand and gravel:				
Dimension stone:				
Crude and partly worked	7	1	--	All to France.
Worked	279	3	--	All to United Arab Emirates.
Gravel and crushed rock	5,469	22,392	--	United Arab Emirates 22,376.
Limestone other than dimension	3,109	195	--	All to United Arab Emirates.
Sand other than metal-bearing	7,683	1,470	--	Do.
Other: Crude	769	40	--	Do.
MINERAL FUELS AND RELATED MATERIALS				
Coal: All grades including briquets	8	11	--	Qatar 8; United Arab Emirates 3.
Petroleum:				
Crude thousand 42-gallon barrels	116,742	124,173	12,118	Japan 63,043; Netherlands 3,161.
Refinery products:				
Liquefied petroleum gas do	441	58	--	United Arab Emirates 35; Qatar 23.
Gasoline do	NA	33	--	Mainly to United Arab Emirates.
Mineral jelly and wax do	--	(2)	--	Mainly to Japan.
Kerosine and jet fuel do	--	1	--	Mainly to United Arab Emirates.
Lubricants do	2	164	--	Singapore 64; United Kingdom 41.
Residual fuel oil do	--	(2)	--	All to United Arab Emirates.

NA Not available.
[1]Table prepared by Virginia A. Woodson.
[2]Less than 1/2 unit.

Table 3.—Oman: Imports of mineral commodities[1]

(Metric tons unless otherwise specified)

Commodity	1982	1983	Sources, 1983	
			United States	Other (principal)
METALS				
Aluminum: Metal including alloys, all forms	1,574	2,487	108	Thailand 652; United Kingdom 362; United Arab Emirates 352.
Copper: Metal including alloys:				
Unwrought	--	1	--	Mainly from United Arab Emirates.
Semimanufactures	233	228	37	United Kingdom 115; Japan 23.
Iron and steel: Metal:				
Pig iron, cast iron, related materials	12	11,321	2,760	Japan 5,984; India 2,500.
Steel, primary forms	184	42	--	United Arab Emirates 24; United Kingdom 15.
Semimanufactures	261,352	255,305	612	Japan 128,065; United Arab Emirates 38,806; West Germany 33,738.
Lead: Metal including alloys, all forms	51	66	--	Austria 25; United Arab Emirates 21.
Nickel: Metal including alloys, all forms	55	2	--	Spain 1.
Silver: Metal including alloys, unwrought and partly wrought[3] value, thousands	$40	$232	--	United Arab Emirates $228.
Tin: Metal including alloys, all forms do	--	$1	--	All from Pakistan.
Zinc: Metal including alloys, all forms do	--	$2	--	All from Japan.
Other: Base metals including alloys, all forms do	--	$8	--	Do.

See footnotes at end of table.

Table 3.—Oman: Imports of mineral commodities[1] —Continued

(Metric tons unless otherwise specified)

Commodity	1982	1983	Sources, 1983	
			United States	Other (principal)
NONMETALS				
Abrasives, n.e.s.:				
Natural: Corundum, emery, pumice, etc	--	8	--	United Arab Emirates 5; United Kingdom 3.
Grinding and polishing wheels and stones	209	181	NA	Italy 135; United Kingdom 32.
Cement thousand tons	1,004	1,280	--	United Arab Emirates 870; Spain 155.
Diamond: Gem, not set or strung value, thousands	$110	$31	--	Switzerland $15; India $8; United Arab Emirates $8.
Fertilizer materials:				
Crude, n.e.s	--	2,409	--	United Arab Emirates 1,264; Netherlands 364; Ireland 351.
Manufactured	3,982	9,044	11	Belgium-Luxembourg 3,742; West Germany 1,849; United Arab Emirates 965.
Gypsum and plaster	290	6,422	--	Spain 6,050; Denmark 236.
Lime	2,504	7,689	--	United Arab Emirates 7,064.
Salt and brine	8,883	6,133	1	United Arab Emirates 3,340; China 984.
Stone, sand and gravel:				
Dimension stone	2,890	7,488	--	United Arab Emirates 3,040; Italy 2,322; Greece 1,583.
Gravel and crushed rock	423	905	220	India 434.
Limestone other than dimension	1,587	99	--	Belgium-Luxembourg 40; United Arab Emirates 34.
Sand other than metal-bearing	844	1,487	813	United Arab Emirates 320; India 295.
Other: Crude	16,301	20,491	46	Thailand 7,722; United Arab Emirates 5,131.
MINERAL FUELS AND RELATED MATERIALS				
Coal: All grades including briquets	157	--		
Petroleum:				
Crude thousand 42-gallon barrels	(2)	--		
Refinery products:				
Liquefied petroleum gas do	170	129	--	United Arab Emirates 128.
Gasoline do	1,963	(2)	--	All from United Arab Emirates.
Kerosine and jet fuel do	1,104	(2)	--	Do.
Distillate fuel oil do	1,936	--	--	
Lubricants do	184	3	--	Mainly from United Arab Emirates.
Residual fuel oil do	60	--		
Bituminous mixtures do	135	--		

NA Not available.
[1]Table prepared by Virginia A. Woodson.
[2]May include platinum-group metals.
[3]Less than 1/2 unit.

QATAR[14]

The mineral industry consisted of crude oil, natural gas, petroleum refinery products, and steel.

The country's economy was based on income from the export of crude oil and refinery products to Japan and Western European markets that contributed more than 90% of state revenues and amounted to about $4.17 billion.[15] The value of nonfuel mineral industry products, which included cement, fertilizers, limestone, and steel, was $357 million or about 9% of the value of exported petroleum products. Other mineral-based commodities, ammonia and urea, produced $200 million and were derived from the petroleum industry. Crude oil production reached 150 million barrels, 47% greater than production in 1983 and about 40% above its OPEC quota.

The increased crude oil sales enabled Qatar to begin implementing two major projects: the $2 billion Wusayl electricity generating-desalination plant, which had been shelved in 1983, and the $6 billion development of the North Field gas reserves. Qatar Liquefied Gas Co. (Qaligas) was formed to develop the liquefied natural gas (LNG) project based on the Amiri Decree issued on November 1, 1984. At that time, Qaligas' owners were the state-owned

Qatar General Petroleum Corp. (QGPC), 70%, and British Petroleum Co. PLC (BP) and CFP-Total, each with a 7.5% interest. QGPC was negotiating with two Japanese combines that were interested in acquiring the remaining 15% interest. Qaligas considered the Far East as its main market for LNG, although northwest Europe also was a possible customer. The field development would be in two phases. Phase 1, estimated to cost $1 to $2 billion, would provide 600 million cubic feet of gas per day for domestic use by 1987. Work on phase 1 was to start at once and would include offshore platforms and a pipeline to transport gas to the industrial complex at Umm Said. Depending on market conditions, phase-2 construction on a $4 to $6 billion gas liquefaction plant would begin in 1988 with completion projected for 1992. BP and CFP-Total were to provide the technical staff for both phases.[16] QGPC contracted with the Fluor Corp. to plan the North Field facilities for the production of gas liquids and condensates.

Qatar Petrochemical Co. (QAPCO) had a record high production in 1984, despite a shortage of gas feedstock. The North Field gas project was expected to provide adequate gas feedstock. QAPCO's production of 204,000 tons of ethylene, 150,000 tons of low-density polyethylene, and 33,000 tons of sulfur was 24%, 3%, and 74% greater, respectively, than their 1983 production. QAPCO was owned by QGPC (84%) and Charbonnages de France-Chemie (CDF-Chemie) (16%). QAPCO was constructing a $55 million ethane recovery plant to raise ethane feedstock from 500 to 1,100 tons per day. The plant was being built by CDF-Chemie and was expected to be completed in 1985.[17]

NORDCO, the refining subsidiary of QGPC, brought its 50,000-bbl/d refinery onstream in February. The refinery was built by the French company Compagnie Française d'Etudes de Construction Technip using the U.S. technology of UOP Inc. (a subsidiary of The Signal Companies Inc.). The Government expected the refinery to meet Qatar's domestic needs for petroleum products to the end of the century. BP agreed to purchase 230,000 barrels per month of fuel oil. The new refinery had been processing only 27,000 bbl/d of crude to produce gasoline only. A pipeline to Doha and a products export facility to Umm were to be completed in late 1985, terminating the present transport by truck.

Qatar Steel Co. (QASCO) also had a record high production in 1984 of 500,000 tons of sponge iron and 488,000 tons of steel used in producing 478,000 tons of reinforcing bar (rebar). Rebar sales to the states of the GCC amounted to $129 million. QASCO was owned by the Government, 70%; Kobe Steel, 20%; and Tokyo Boeki Ltd. of Japan, 10%.

SYRIA[18]

The Syrian Government was strongly committed to the development of their economy. With this type of commitment, the Government invested large sums in road and railroad construction. Its economic development program exhibited a strong socialist orientation with emphasis on transfer of productive activity from the private to the public sector and diversion of capital away from agriculture toward heavy industry, such as cement plants. This practice had created a gradual deceleration in the pace of overall economic growth. The Syrian economy was heavily dependent on foreign assistance to stay afloat. Many development projects in Syria were funded by United Nations assistance funds. Syria's socialist system of government, along with the state of the economy, was not encouraging to private initiative.

Syria had experienced steady but comparatively modest economic growth since 1972, a reflection of Syria's limited petroleum resources and the relatively developed state of its economy prior to the oil boom that engulfed many other Arab states. Although Syria did not witness the phenomenal increase in revenue experienced by several other oil exporting countries, in 1984, it was able to capitalize on increased crude oil prices.

Despite efforts to reduce imports, Syria continued to face trade deficits of some magnitude. Exports of crude oil and refined products faced slack international demand and weak prices. Phosphate exports also continued to encounter weak demand.

Syria also had a problem like other developing countries with a shortage of foreign exchange. Syria, however, did not allow itself to become bogged down with unmanageable foreign commercial debt. As reduced demand for crude oil cut the revenues of Syria's primary aid donors and the en-

suing economic slump cut economic activity in the Gulf, both aid and remittance receipts were reduced.

For 3 years, Syria had been able to produce approximately 160,000 bbl/d of relatively heavy crude oil. This level of production enabled Syria to preserve a balance between crude oil imports and exports of crude oil and refined products, which generated foreign exchange. Syrian Petroleum Co. would be able to maintain current production only if additional primary production equipment was used plus use of expensive secondary and tertiary recovery techniques. To maximize the utilization of the combined 230,000-bbl/d Homs and Baniyas refineries, in 1984, Syria obtained quantities of lighter crude oil from Iran to blend with heavier domestic oil. To delay the time when imports exceed exports, Syrian Petroleum authorized several studies to maximize drilling performance and to implement enhanced recovery techniques. Several new drilling rigs, one of which was capable of drilling to 5,000 meters, had been ordered. A Bulgarian firm, Bulgargeomin, was engaged in a project of tapping natural gas reserves in the Jubaisseh Field. A Czechoslovak company, Technoexport, was constructing a plant to sweeten the gas and building a pipeline to transport it to Homs. At the same time, a French company, Entrepose, was completing a project to gather and sweeten associated gas from the oilfields of the northeast. The gas was scheduled for use in power generation and in chemical processing plants. Two U.S. oil companies, Marathon Oil Co. and Shell Pecten Co., continued their exploration efforts in central Syria.

Meanwhile, Shell Pecten discovered oil near Deir el-Zor in northeastern Syria. There were three drilling rigs, two deep and one shallow, working in the area of the discovery, which yielded 7,000 bbl/d of light low-sulfur crude. First estimates put the well's productive capacity at 30,000 to 50,000 bbl/d. Appraisal and development work on the discovery was expected to take at least 2 years. An agreement between Syria and Shell Pecten provided for the establishment of a company, Al-Rasafah, that would operate the Deir el-Zor concession after oil was discovered. Syria was to share with its foreign partners, on a 75% to 25% basis, all oil production up to 200,000 bbl/d, and, on an 85% to 15% basis, all oil in excess of 200,000 bbl/d. Prior to the new discovery, all oil production in Syria was heavier high-sulfur crude.

Phosphate rock was produced in two mining areas, Khneifiss and the Ghadir-al-Hamal region of the Palmyrides. The mines were set up through technical assistance of Eastern European countries, particularly Romania. Export sales fell below the 1-million-ton mark in 1984, and this was accompanied by lower price levels. Domestic sales of phosphate rock that are used to make phosphate fertilizers, however, increased substantially.

PEOPLE'S DEMOCRATIC REPUBLIC OF YEMEN[19]

Raw materials extraction in the People's Democratic Republic of Yemen (PDRY) was limited to industrial minerals and salt, while the processing of minerals was limited to cement manufacturing and oil refining. PDRY reaffirmed the importance of minerals development by creating a Ministry of Energy and Minerals.

Mineral resource development was at an early but active stage in PDRY. Although PDRY did not yet produce crude oil, it was adversely affected by the troubled world oil market because the country received aid from OPEC.

Investment in petroleum exploration was encouraged by PDRY. Interest in PDRY surfaced in 1982 when Azienda Generali Italiana Petroli S.p.A. (AGIP) drilled a 3,000-bbl/d well offshore the Hadhramaut Governate. The concession was renewed in 1983. AGIP drilled two appraisal wells in late 1984. To date, reserves are calculated to be no more than 30 million barrels, but the find was only 8 kilometers offshore, and this location could make it a commercial well. The discovery oil was 43° API gravity, adding to its viability. In other areas of PDRY, Braspetro, the foreign service arm of Petróleo Brasileiro S.A. of Brazil, and Hispánica de Petróleos S.A. (Hispanoil) of Spain share a large onshore lease.

BP purchased from Braspetro a 25% interest in the 42,000-square-kilometer Braspetro-Hispanoil lease in the Haurin-Ghayada block in the eastern part of PDRY. Braspetro previously owned 80% of the lease with Hispanoil owning 20%. Braspetro owned 55% of the equity and was the operator of the lease in 1984. The production-sharing agreement with PDRY's Petro-

leum Exploration Department provided for a four-well drilling program to start within 3 years. Kuwait's Independent Petroleum Group (IPG) held an offshore lease near Balhalf, showing enough seismic promise to prompt IPG to take an option on an adjacent onshore block. The IPG was committed to drill three holes in the onshore block, commencing in 1985.

Investment in cement producing facilities was at a relatively high level during 1984, and cement capacity was under expansion. India's Development Consultants International submitted plans to PDRY for the Batais Cement Co. project, involving a 1,200-ton-per-day cement plant and a 16-megawatt powerplant. Finance for the venture was offered by the German Democratic Republic, which would supply equipment, and by France, which would provide a government credit coupled with a buyer's credit. PDRY was also developing other production facilities for construction materials. During 1984, PDRY placed a $1.3 million order for equipping a construction sand operation at Lahej.

Plans to develop iron and steel industries seem to have made little progress in 1984, despite the availability of a $1 million[20] Indian Government credit for the construction of an iron foundry. Arab Mining Co. (Armico) announced that it would form a joint holding company with PDRY to supervise mining projects. Armico personnel visited sites in PDRY in 1984 containing occurrences of gold, rare earths, and marble. In still another instance, an exploration agreement was signed between PDRY and the U.S.S.R. for prospecting for gold in the eastern Hadhramaut Governate.

YEMEN ARAB REPUBLIC[21]

Raw minerals extraction in the Yemen Arab Republic (YAR) was limited to salt and building industry minerals. Mineral resource development was at an early active stage. The bright spot in the YAR economy was news that oil was discovered about 200 miles east of Sanaa in July 1984. The discovery in the Ma'rib-Jawf area was made by Hunt Oil Co., a U.S. firm, while drilling its first wildcat well. The well, at a total depth of 13,720 feet, had a potential to produce 10,000 bbl/d of oil. YAR hoped to know by early 1985 if profitable quantities of oil were present. Even if oil was found to be economically producible, exports of oil were projected to be 4 years in the future.

Economic growth in the YAR was expected to remain near the 1982-83 level when the increase in GDP was about 2%. YAR was faced with a problem of diminished foreign loans and grants. YAR used cash payments from foreign governments to pay for capital-investment projects or to cover the Government's budget deficit. The decrease in foreign government cash payments in 1984 caused YAR to extend project schedules in its 1982-86 5-year economic plan.

The YAR Government granted Hunt an extension to its concession in the Ma'rib-Jawf area and approved the company's offshore concession in the Red Sea. The Government also commissioned Hunt to conduct studies on a crude oil export pipeline to the Red Sea and the establishment of a domestic refinery. All of these developments followed Hunt's discovery in the Ma'rib-Jawf area. Hunt was engaged in a nine-well appraisal drilling program in the Alif discovery well vicinity. The first two found oil, but how prolific they were was not disclosed. The other seven wells were scheduled for completion by April 1985. After all drilling results are analyzed, international banks will be approached to provide financing for the development of the field in the range of $1 billion.[22] Early in 1984, Hunt sold a 24.5% interest in the concession to a group from the Republic of Korea, which undertook to provide 49% of the development capital. Estimates on productivity of the new oil discovery in YAR ranged from 75,000 to 300,000 bbl/d.

BP was also exploring for oil in YAR. BP signed a $4 million production-sharing agreement in January 1984 for an exploration permit covering 22,000 square kilometers in the Tihama coastal plain, extending from Midi on the Saudi Arabian border to 10 kilometers south of Hodeida. Seismic work began in April and was planned to be completed by the end of 1985.

Salt was produced from rock salt mines in YAR. The Yemen Co. for Salt Refining and Packing invited bids for a turnkey, 10,000- to 20,000-ton-per-year table salt plant, which would process the output of the Saleef Mine. The plant was to be at Hodeida.

Cement production in YAR was scheduled to increase owing to plant construction and enlargements. The new 300,000-ton-per-year Bajel works, built with the Soviet Union's technical and financial assistance,

was commissioned in 1984. Expansion of this plant to 500,000 tons per year had been discussed with the Soviets. The YAR Government announced desire to double the capacity of the earlier Japanese-built works at Amran to 1 million tons per year. The Government also announced a site for a third cement plant at Mafraq, which would be scheduled to produce 500,000 tons per year. Completion of these projects would give YAR a production schedule of 2 million tons per year.

Yemeni Co. for Gypsum Industry, established in 1983, aimed at mining, processing, manufacturing, and marketing gypsum in YAR. Initial production was planned for early 1986. The scheduled capacity of the plant was 85,000 tons per year. Total cost of the project was approximately $7 million. Armico was a 20% shareholder in the venture.

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[1]Physical scientist, Division of International Minerals.
[2]Prepared by Ben A. Kornhauser.
[3]Where necessary, values have been converted from Afghan afghanis (Af) to U.S. dollars at the rate of Af50.60 = US$1.00.
[4]Prepared by Thomas O. Glover.
[5]Where necessary, values have been converted from Bahraini dinars (BD) to U.S. dollars at the rate of BD0.376 = US$1.00.
[6]Prepared by Ben A. Kornhauser.
[7]Where necessary, values have been converted from Lebanese pounds (LL) to U.S. dollars at the rate of LL6.51 = US$1.00. In view of the turmoil in Lebanon, the currency value must be viewed cautiously.
[8]Prepared by Ben A. Kornhauser.
[9]Where necessary, values have been converted from Omani riyals (ORls) to U.S. dollars at the rate of ORls1 = US$42.895.
[10]Petroleum Economist. V. 51, No. 5, May 1984, p. 193.
[11]Middle East Economic Survey. V. 28, No. 5, Nov. 12, 1984, p. A6.
[12]———. V. 28, No. 1, Oct. 15, 1984, p. A5.
[13]Petroleum Economist. V. 52, No. 1, Jan. 1985, pp. 21-22.
[14]Prepared by Ben A. Kornhauser.
[15]Where necessary, values have been converted from Qatari riyals (QRls) to U.S. dollars at the rate of QRls 3.64 = US$1.00.
[16]Oil and Gas Journal. July 2, 1984, p. 33.
[17]Middle East Economic Survey. V. 28, No. 14, Jan. 14, 1985, p. A11.
[18]Prepared by Thomas O. Glover.
[19]Prepared by Thomas O. Glover.
[20]Where necessary, values have been converted from Yemeni dinars (SYD) to U.S. dollars at the rate of SYD0.345 = US$1.00.
[21]Prepared by Thomas O. Glover.
[22]Where necessary, values have been converted from Yemeni rials (Y Rls) to U.S. dollars at the rate of Y Rls5.860 = US$1.00.

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